

# Hantavirus Pulmonary Syndrome



*In May 1993, health officials investigated an outbreak of an unusual illness in the southwestern United States that can cause a person's lungs to fill with fluid. The investigation led to the identification of a new viral disease called Hantavirus Pulmonary Syndrome (HPS). Since its discovery, HPS cases have been reported across the United States.*

## **What causes Hantavirus Pulmonary Syndrome (HPS)?**

HPS is caused by a newly identified strain of hantavirus found in certain types of rodents. It is similar to other hantaviruses except it attacks the lungs while most other related viruses affect the kidneys. The strain found in the western United States is called the *Sin Nombre* virus (Spanish for "virus with no name") and is carried primarily by wild mice, particularly deer mice (*Peromyscus* species). Other types of hantavirus have been identified in eastern states.

## **How does a person get Hantavirus Pulmonary Syndrome (HPS)?**

Like other strains of hantavirus found in rodents, the *Sin Nombre* strain is probably excreted in the urine, droppings or saliva of infected rodents. A person is infected by breathing in viral particles released into the air when infected rodents, their nests or their droppings are disturbed. This can happen when a person is handling rodents, disturbing their nests or burrows, cleaning buildings where rodents have been, or working outdoors. The virus will die quickly when exposed to sunlight. No evidence of person-to-person spread of the virus exists in the United States. Transmission of HPS to health care workers and family members of HPS patients has not occurred.

## **Who has been affected by Hantavirus Pulmonary Syndrome?**

Although anyone can get this illness, HPS patients in Arizona have ranged in age from 11 to 71 years old. HPS affects people of all races and ethnic groups.

## **How soon after contact with this Hantavirus do symptoms appear?**

The first symptoms generally appear within 1-6 weeks of contact with the virus. Most people get sick within the first 2-3 weeks.

## **What are the symptoms of Hantavirus Pulmonary Syndrome (HPS)?**

The first symptoms of hantaviral illness are much like those of other respiratory conditions. They are flu-like and may include fever, muscle aches, dry non-productive cough, vomiting, and/or abdominal pain, and they usually last from 2-15 days. Hantavirus symptoms do not include runny nose, sneezing and other upper respiratory tract problems typically seen with colds and allergies. In severe cases, an HPS-infected person's lungs begin filling with fluid and difficulty breathing is noted. If you or someone under your care develops these symptoms within 1-6 weeks after a rodent exposure, see your doctor immediately.

## **Is there any treatment available for persons with Hantavirus Pulmonary Syndrome?**

Some patients have been treated with antiviral agents. Other people have recovered with intensive hospital care. Early treatment offers the best prognosis. This is why it's important to notify your doctor early or otherwise promptly seek urgent care if you have had a rodent exposure and experience symptoms consistent with HPS.

## **How can I protect myself from Hantavirus Pulmonary Syndrome?**

The best defense against infection with hantavirus is to avoid all contact with rodents, their nests and droppings. If you discover rodents or their nests outside of your residence, leave them alone if possible. To discourage rodents from entering your home, take the following precautions:

- Seal, cover or screen openings larger than a quarter inch to prevent mice from entering homes, sheds or crawl spaces. Eliminate rodent infestations in and around the home.

- Wash dirty dishes and clean up spilled food immediately. Keep food, including pet food, tightly sealed or covered in hard plastic or metal containers. Do not leave pet food out overnight.
- Avoid the accumulation of clutter in and around your home.
- Do not sweep or vacuum areas with evidence of rodent activity until proper clean-up methods have been used (see #6 below).

### **What if I find signs of mice in my home?**

Removing rodents from your home will decrease your risk of hantavirus infection and other rodent-borne illnesses. Follow these standard rodent removal and clean-up guidelines:

- 1) Set traps that will kill the mouse or rat. Peanut butter is a very effective bait.
- 2) Wear rubber gloves and spray the nest area or dead rodent with a household insecticide that kills fleas. Be sure to follow the label instructions and wait at least one hour for the insecticide to work.
- 3) Next, spray the nest or dead rodent until soaked with a household disinfectant solution, such as Lysol®, mixed as recommended on the label. A solution of one part household bleach to nine parts water may be used, but it may damage rugs and fabrics and irritate skin. Let the area soak for 10-15 minutes. Spraying disinfectant will help to kill the virus and settle the dust. Reapply the disinfectant as necessary to keep the cleanup area moist for dust control. Wear a dust particle mask during all cleanup activities.
- 4) Remove the nest or rodent using a long handled shovel or other implement.
- 5) Double bag the rodent or nest securely with plastic bags and dispose of it in the trash.
- 6) Clean up the rodent area, or any area with signs of droppings or urine, by spraying it with the disinfectant. Let the area soak for 10-15 minutes. While still wearing gloves, wipe up the area with paper towels or rags. Double-bag all paper towels, rags or gloves used in the clean up. Dispose of them in the trash.

### **Can the Health Department test rodents that I have trapped for Hantavirus?**

At present, rodents cannot be tested for the presence of hantavirus. Any rodents that are trapped in or around your home should be disposed of according to the instructions in this brochure. Human blood can be tested for hantavirus. Such testing must be ordered and collected by your doctor and forwarded to the Arizona State Health Laboratory.

### **Are there any travel restrictions in Arizona?**

There are no travel restrictions in Arizona or other states with confirmed hantavirus cases.

### **Where does the Hantavirus occur?**

Studies in Arizona have shown that hantavirus infections can occur in wild mice throughout the state, and human cases of HPS have occurred in both northern and southern counties. People living or working in rural areas are at a greater risk for encountering wild mice and their droppings. In the United States, HPS cases have occurred from coast to coast. Over 40% of the cases have been fatal.

**For more information contact your local health department or:**



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Arizona website: [www.azdhs.gov/phs/oids/vector/index.htm](http://www.azdhs.gov/phs/oids/vector/index.htm)  
CDC Website: [www.cdc.gov/ncidod/diseases/hanta/hps/index.htm](http://www.cdc.gov/ncidod/diseases/hanta/hps/index.htm)